

REMARKS

Claims 1-23 were pending at the time of the Action. Claims 1-3, 5-8, 11-16 and 18-23 were rejected in the Action under 35 U.S.C. Section 103 as being unpatentable over U.S. Patent No. 6,369,762 to Yanagisawa et al. ("Yanagisawa") in view of U.S. Patent No. 6,104,356 to Hikuma et al. ("Hikuma"). Claim 4 was rejected in the Action under Section 103 as being unpatentable over Yanagisawa and Hikuma in further view of U.S. Published Application 2003/0076272 to Kurjenheimo et al. ("Kurjenheimo"). Claim 17 was rejected in the Action under Section 103 as being unpatentable over Yanagisawa and Hikuma in further view of U.S. Published Application 2004/0056804 to Kadambi et al. ("Kadambi"). Claims 9-10 were rejected in the Action under Section 103 as being unpatentable over Yanagisawa and Hikuma in further view of U.S. Patent No. 7,212,164 to Miyano et al. ("Miyano").

In response to Applicants' paper dated August 17, 2007, the Action states that the limitation reciting "selectively connecting one or both of the antenna elements to the ground substrate" only requires one connection. Accordingly, independent Claims 1 and 18 have been amended to recite that the ground connector switch means are configured to connect both the first and second antenna elements to ground at the same time for adapting the antenna to a circularly-polarised radio wave, and the ground connector switch means are also configured to connect one of the first and second antenna elements to ground, and to disconnect the other of the first and second antenna elements from ground for adapting the antenna to a linearly-polarised radio wave. Claims 6-7 and Claims 22-23 have been cancelled.

Applicants submit that these features are not disclosed in the art cited in the Action, and reconsideration is respectfully requested for at least the reasons discussed below. A Request for Continued Examination is filed concurrently herewith, and entry of the above amendments is respectfully requested.

Independent Claims 1 and 18 are patentable over Yanagisawa and Hikuma

Claim 1 recites a diversity radio antenna, including:

a ground substrate, first and second elongated antenna elements, each extending between respective first and second opposing ends thereof in a plane parallel to and spaced from the ground substrate, and an excitation electrode interposed between the respective first ends, each antenna element having one grounding point connectable to the ground substrate, wherein the first antenna element has a first ground connector switch means selectively connecting or disconnecting the first antenna grounding point to the ground substrate, and the second antenna element has a second ground connector switch means selectively connecting or disconnecting the second antenna grounding point to the ground substrate, wherein the first and second ground connector switch means are configured to connect both the first and second antenna elements to ground at the same time for adapting the antenna to a circularly-polarised radio wave, and the first and second ground connector switch means are also configured to connect one of the first and second antenna elements to ground, and to disconnect the other of the first and second antenna elements from ground for adapting the antenna to a linearly-polarised radio wave.

Claim 18 recites a radio communication terminal including a diversity radio antenna including substantially the recitations of Claim 1.

The Action concedes that Yanagisawa fails to teach the first and second ground connector switch means. *See* the Action, page 2. The Action cites Hikuma as teaching this feature. *See* the Action at page 3.

Applicants acknowledge that switches are known. However, as stated in the Examination Guidelines for Determining Obviousness Under 35 U.S.C. §103 in view of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, "[w]hen considering the obviousness of a combination of known elements, the operative question is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." (M.P.E.P. §2141, pp. 116, citing *Teleflex*). A question regarding whether a claimed invention is obvious under 35 U.S.C. § 103 must include an analysis of the factors set forth in *Graham v. John Deere Co.* (383 U.S. 1, 148 USPQ 459 (1966)), which are described by the Supreme Court in the *KSR* decision to be 1) determining the scope and content of the prior art: 2)

ascertaining the differences between the claimed invention and the prior art; and 3) resolving the level of ordinary skill in the pertinent art (hereinafter, the "*John Deere* factors"). The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. M.P.E.P. § 2143. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v. Teleflex Inc.*, 550 U. S. 1, 15 (2007). A Court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 13. When it is necessary for a Court to look at interrelated teachings of multiple patents, the Court must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. *Id.* at 14.

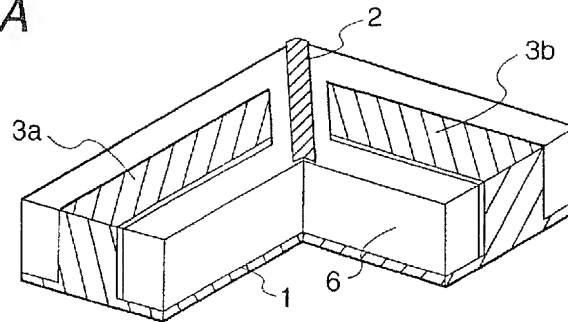
Applicants further submit that there are no apparent reasons to combine Yanagisawa and Hikuma. However, even if it could be argued that Hikuma and Yanagisawa could be combined, Applicants submit that the recitations of independent Claims 1 and 18 are more than a predictable use of prior art elements because the claimed first and second ground connector switch means are configured to connect both the first and second antenna elements to ground at the same time for adapting the antenna to a circularly-polarized radio wave, and the first and second ground connector switch means are also configured to connect one of the first and second antenna elements to ground, and to disconnect the other of the first and second antenna elements from ground for adapting the antenna to a linearly-polarized radio wave. Accordingly, the configuration of Claims 1 and 18 can be used for adapting the antenna for both circularly-polarized waves and for linearly-polarized waves, which is more than a predictable use of prior art elements because neither Yanagisawa or Hikuma discloses or appreciates the advantages of this feature.

In particular, Yanagisawa states at col. 7, lines 10-13:

Two linearly-polarized waves which are equal in power and 90-degrees out of phase with each other are radiated simultaneously, thereby radiating a circularly-polarized wave.

See also Figure 1A of Yanagisawa (reproduced below).

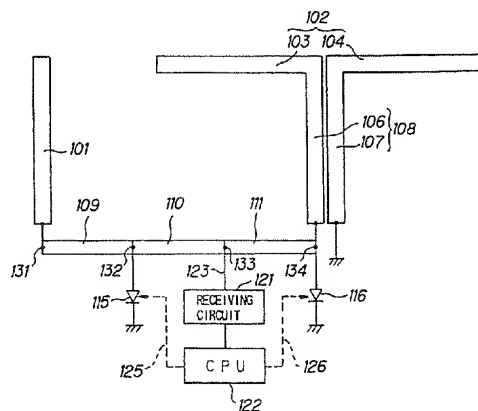
FIG. 1A



Accordingly, the electrodes 3a and 3b of Yanagisawa radiate linearly-polarized waves simultaneously and are both connected to the ground substrate 1, thereby radiating a circularly-polarized wave.

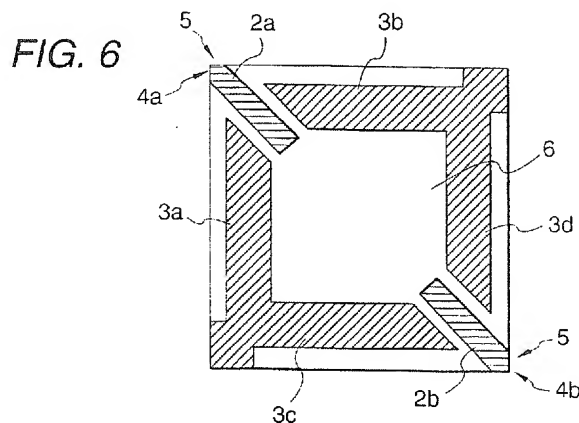
Although Hikuma discusses a switching means 115, Applicants submit that there is no apparent reason to combine the known element of a switch in the claimed configuration with the antenna electrodes of Yanagisawa. Hikuma proposes switching between two antennas 101, 102 based on signal strength. See Hikuma at col. 4, lines 18-27 and Figure 1. (reproduced below).

FIG. 1



Applicants submit that there is no apparent reason to combine the switch of Hikuma (which switches between two separate antennas 101, 102 based on signal strength) with electrodes in a single circularly-polarized wave antenna configuration of Yanagisawa (which proposes connecting both electrodes 3a and 3b to ground to radiate a circularly-polarized

wave). The Action states that "Yanagisawa teaches that it is desirable to switch between polarizations enabling effective transmission/reception (col. 8, lines 34-49)." However, the cited portion of Yanagisawa merely refers to a switch between two antennas (one electrode pair 3a and 3b and another electrode pair 3c and 3d in Figure 6 (reproduced below)) for both right- and left-handed circularly-polarized waves. Thus, even if it could be argued that it would be obvious to combine Yanagisawa and Hikuma, Applicants submit that the result of such a combination would likely be a switch between two antennas, such as is shown in Figure 6 of Yanagisawa. Applicants submit that there are no apparent reasons presented to include a switch between the electrode elements of a single antenna in Yanagisawa as proposed in the Action.



Moreover, Applicants submit that the claimed first and second switching means is more than the predictable use of prior art elements according to their established functions. Although switching means are known, the first and second switching means recited in the configurations of Claims 1 and 18 result in adapting the antenna for both circularly-polarized waves and for linearly-polarized waves. This feature is not realized or appreciated by the configurations of either Yanagisawa or Hikuma.

It is noted that Kurjenheimo, Kadambi and Miyano (pages 7-8 of the Action) do not cure the deficiencies of Yanagisawa and Hikuma.

For at least these reasons, neither Hikuma nor Yanagisawa teach or suggest all of the recitations of Claims 1 and 18, and cannot render the recitations of Claims 1 and 18 obvious. Claims 2-5 and 8-17 depend from Claim 1 and Claims 19-21 depend from Claim 18 and are


Attorney Docket No. 9342-81
Application Serial No. 10/549,717
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Page 12

patentable for at least the reasons discussed above. Accordingly, Applicants request that the rejection of Claims 1-5 and 8-21 be withdrawn.

CONCLUSION

Accordingly, Applicants submit that the present application is in condition for allowance and the same is earnestly solicited. Should the Examiner have any matters outstanding of resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

Respectfully submitted,



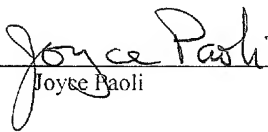
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Joyce Paoli